WHAT IS CLAIMED

1. An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

(a) the nucleotide sequence as set forth in at least one of SEQ ID NO:1, SEQ ID NO:4, and SEQ ID NO:6;

(b) a nucleotide sequence encoding the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(c) a nucleotide sequence which hybridizes under moderately or highly stringent conditions to the complement of (a) or (b), wherein the polypeptide encoded by the nucleotide sequence has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7; and

(d) a nucleotide sequence complementary to any of (a)-(c).

2. An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence encoding a polypeptide that is at least about 70 percent identical to the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7, wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(b) a nucleotide sequence encoding an allelic variant or splice variant of the nucleotide sequence as set forth in at least one of SEQ ID NO:1, SEQ ID NO:4, and SEQ ID NO:6, wherein the encoded polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(c) a nucleotide sequence of at least one of SEQ ID NO:1, SEQ ID NO:4, and SEQ ID NO:6; (a); or (b) encoding a polypeptide fragment of at least about 25 amino acid residues, wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(d) a nucleotide sequence of at least one of SEQ ID NO:1, SEQ ID NO:4, and SEQ ID NO:6, or (a)-(c) comprising a fragment of at least about 16 nucleotides;

(e) a nucleotide sequence which hybridizes under moderately or highly stringent conditions to the complement of any of (a)-(d), wherein the polypeptide encoded by the nucleotide sequence has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7; and

(f) a nucleotide sequence complementary to any of (a)-(c).

3. An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence encoding a polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7, with at least one conservative amino acid substitution, wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(b) a nucleotide sequence encoding a polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7, with at least one amino acid insertion, wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(c) a nucleotide sequence encoding a polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7, with at least one amino acid deletion, wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(d) a nucleotide sequence encoding a polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7, which has a C- and/or N- terminal truncation, wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(e) a nucleotide sequence encoding a polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7, with at least one modification selected from the group consisting of amino acid substitutions, amino acid insertions, amino acid deletions, C-terminal truncation, and N-terminal truncation, wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(f) a nucleotide sequence of (a)-(e) comprising a fragment of at least about 16 nucleotides;

(g) a nucleotide sequence which hybridizes under moderately or highly stringent conditions to the complement of any of (a)-(f), wherein the polypeptide encoded by the nucleotide sequence has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7; and

(h) a nucleotide sequence complementary to any of (a)-(e).

4. A vector comprising the nucleic acid molecule of Claim 1, 2, or 3.

5. A host cell comprising the nucleic acid molecule of Claim 1, 2 or 3.

6. A host cell comprising the nucleic acid molecule of claim 1, 2 or 3 operatively linked to a regulatory sequence other than the promoter for a native IL-17 receptor like polypeptide.

7. A host cell modified by transformation or transfection with a regulatory nucleic acid, wherein said regulatory nucleic acid promotes transcription or translation of a nucleic acid comprising the sequence of SEQ ID NO: 1, 4, or 6 or an allelic variant or a fragment thereof.

8. The host cell of claim 7 wherein the regulatory nucleic acid sequence is a promoter.

9. The host cell of claim 7 wherein the regulatory nucleic acid is a transcription factor.

10. The host cell of Claim 5 that is a eukaryotic cell.

11. The host cell of Claim 5 that is a prokaryotic cell.

12. A process of producing an IL-17 receptor like polypeptide comprising culturing the host cell of Claim 5, 6 or 7 under suitable conditions to express the polypeptide, and optionally isolating the polypeptide from the culture.

13. A polypeptide produced by the process of Claim 12.

14. The process of Claim 12, wherein the nucleic acid molecule comprises promoter DNA other than the promoter DNA for the native IL-17 receptor like polypeptide operatively linked to the DNA encoding the IL-17 receptor like polypeptide.

15. The isolated nucleic acid molecule according to Claim 2 wherein the percent identity is determined using a computer program selected from the group consisting of GAP, BLASTP, BLASTN, FASTA, BLASTA, BLASTX, BestFit, and the Smith-Waterman algorithm.

16. A process for detecting a candidate inhibitor of IL-17 receptor like polypeptide activity or production comprising exposing a cell according to Claim 5, 6, 7, 10 or 11 to the candidate inhibitor, detecting IL-17 receptor like polypeptide activity or production in said cell, and comparing activity of IL-17 receptor like polypeptide in cells exposed to the candidate inhibitor with activity in cells not exposed to the candidate inhibitor.

17. A process for detecting a candidate stimulator of IL-17 receptor like polypeptide activity or production comprising exposing a cell according to Claim 5, 6, 7, 10 or 11 to the candidate stimulator, detecting IL-17 receptor like polypeptide activity or production in said cell, and comparing activity of IL-17 receptor like polypeptide in cells exposed to the candidate stimulator with activity in cells not exposed to the candidate stimulator.

18. An isolated polypeptide comprising the mature amino acid sequence set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7.

19. An isolated polypeptide comprising the amino acid sequence selected from the group consisting of:

(a) the mature amino acid sequence of at least one of SEQ ID NO: 2, SEQ ID NO: 5, and SEQ ID NO: 7, comprising a mature amino terminus at residue 1, optionally further comprising an amino terminal methionine;

(b) an amino acid sequence for an ortholog of at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7, wherein the encoded polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(c) an amino acid sequence that is at least about 70 percent identical to the amino acid sequence of at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7, wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(d) a fragment of the amino acid sequence set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7 comprising at least about 25 amino acid residues, wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(e) an amino acid sequence for an allelic variant or splice variant of either the amino acid sequence as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7, or at least one of (a)-(b) wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7.

20. An isolated polypeptide comprising the amino acid sequence selected from the group consisting of:

(a) the amino acid sequence as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7, with at least one conservative amino acid substitution, wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(b) the amino acid sequence as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7, with at least one amino acid insertion, wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(c) the amino acid sequence as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7, with at least one amino acid deletion, wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7;

(d) the amino acid sequence as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7 which has a C- and/or N-terminal truncation, wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7; and

(e) the amino acid sequence as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7, with at least one modification selected from the group consisting of amino acid substitutions, amino acid insertions, amino acid deletions, C-terminal truncation, and N-terminal truncation, wherein the polypeptide has an activity of the polypeptide as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7.

21. An isolated polypeptide encoded by the nucleic acid molecule of Claim 1, 2, or 3.

22. A polypeptide according to claim 19 or 20 wherein the amino acid at position 167 of SEQ ID NO: 2, amino acid at position 225 of SEQ ID NO: 5 or the amino acid at position 50 of SEQ ID NO: 7 is leucine, isoleucine, valine, methionine, or phenylalanine.

23. A polypeptide according to claim 19 or 20 wherein the amino acid at position 261 of SEQ ID NO: 2, amino acid at position 319 of SEQ ID NO: 5 or the amino acid at position 144 of SEQ ID NO: 7 is cysteine, serine or alanine.

24. A polypeptide according to claim 19 or 20 wherein the amino acid at position 299 of SEQ ID NO: 2, amino acid at position 357 of SEQ ID NO: 5 or the amino acid at position 212 of SEQ ID NO: 7 is leucine, norleucine, glutamine, asparagine, arganine, or 1,4, diamino-butyric acid.

25. A polypeptide according to claim 19 or 20 wherein the amino acid at position 313 of SEQ ID NO: 2, amino acid at position 371 of SEQ ID NO: 5 or the amino acid at position 196 of SEQ ID NO: 7 is tyrosine, phenylalanine or tryptophan.

26. A polypeptide according to claim 19 or 20 wherein the amino acid at position 413 of SEQ ID NO: 2, amino acid at position 471 of SEQ ID NO: 5 or the amino acid at position 296 of SEQ ID NO: 7 is glycine, proline or alanine.

27. A polypeptide according to claim 19 or 20 wherein the amino acid at position 433 of SEQ ID NO: 2, amino acid at position 491 of SEQ ID NO: 5 or the amino acid at position 313 of SEQ ID NO: 7 is asparatic acid or glutamic acid.

28. The isolated polypeptide according to Claim 19 wherein the percent identity is determined using a computer program selected from the group consisting of GAP, BLASTP, BLASTN, FASTA, BLASTA, BLASTX, BestFit, and the Smith-Waterman algorithm.

29. An antibody produced by immunizing an animal with a peptide comprising an amino acid sequence of at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7.

30. An antibody or fragment thereof that specifically binds the polypeptide of Claim 18, 19, 20 or 21.

31. The antibody of Claim 30 that is a monoclonal antibody.

32. A hybridoma that produces a monoclonal antibody that binds to a peptide comprising an amino acid sequence of at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7.

33. A method of detecting or quantitating the amount of IL-17 receptor like polypeptide using the anti-IL-17 receptor like antibody or fragment of Claim 29, 30, or 31.

34. A selective binding agent or fragment thereof that specifically binds at least one polypeptide wherein said polypeptide comprises the amino acid sequence selected from the group consisting of:

a) the amino acid sequence as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7; and

b) a fragment of the amino acid sequence set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7; and

c) a naturally occurring variant of (a) or (b).

35. The selective binding agent of Claim 34 that is an antibody or fragment thereof.

36. The selective binding agent of Claim 34 that is a humanized antibody.

37. The selective binding agent of Claim 34 that is a human antibody or fragment thereof.

38. The selective binding agent of Claim 34 that is a polyclonal antibody or fragment thereof.

39. The selective binding agent Claim 34 that is a monoclonal antibody or fragment thereof.

40. The selective binding agent of Claim 34 that is a chimeric antibody or fragment thereof.

41. The selective binding agent of Claim 34 that is a CDR-grafted antibody or fragment thereof.

42. The selective binding agent of Claim 34 that is an antiidiotypic antibody or fragment thereof.

43. The selective binding agent of Claim 34 which is a variable region fragment.

44. The variable region fragment of Claim 43 which is a Fab or a Fab' fragment.

45. A selective binding agent or fragment thereof comprising at least one complementarity determining region with specificity for a polypeptide having the amino acid sequence of at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7.

46. The selective binding agent of Claim 34 which is bound to a detectable label.

47. The selective binding agent of Claim 34 which antagonizes IL-17 receptor like polypeptide biological activity.

48. The selective binding agent of claim 34 which inhibits binding of IL-17 receptor like polypeptide to a n IL-17E ligand.

49. A method for treating, preventing, or ameliorating a disease, condition, or disorder comprising administering to a patient an effective amount of a selective binding agent according to Claim 34, 47 or 48.

50. A selective binding agent produced by immunizing an animal with a polypeptide having the amino acid sequence of at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7.

51. A hybridoma that produces a selective binding agent capable of binding a polypeptide according to Claim 1, 2, or 3.

52. A composition comprising the selective binding agent of claim 34, 47, or 48 and a pharmaceutically acceptable formulation agent.

53. A composition comprising the polypeptide of Claim 18, 19 or 20 and a pharmaceutically acceptable formulation agent.

54. The composition of Claim 53 wherein the pharmaceutically acceptable formulation agent is a carrier, adjuvant, solubilizer, stabilizer, or anti-oxidant.

55. The composition of Claim 53 wherein the polypeptide comprises the amino acid sequence as set forth in at least one of SEQ ID NO:2, SEQ ID NO:5, and SEQ ID NO:7.

56. A polypeptide comprising a derivative of the polypeptide of Claim 18, 19, or 20.

57. The polypeptide of Claim 56 which is covalently modified with a water-soluble polymer.

58. The polypeptide of Claim 56 wherein the water-soluble polymer is selected from the group consisting of polyethylene glycol, monomethoxy-polyethylene glycol, dextran, cellulose, poly-(N-vinyl pyrrolidone) polyethylene glycol, propylene glycol homopolymers, polypropylene oxide/ethylene oxide co-polymers, polyoxyethylated polyols, and polyvinyl alcohol.

59. A composition comprising a nucleic acid molecule of Claim 1, 2, or 3 and a pharmaceutically acceptable formulation agent.

60. A composition of Claim 59 wherein said nucleic acid molecule is contained in a viral vector.

61. A viral vector comprising a nucleic acid molecule of Claim 1, 2, or 3.

62. A fusion polypeptide comprising the polypeptide of Claim 18, 19, 20 or 21 fused to a heterologous amino acid sequence.

63. The fusion polypeptide of Claim 62 wherein the heterologous amino acid sequence is an immunoglobulin constant domain or fragment or variant thereof.

64. A method for treating, preventing or ameliorating a medical condition in a mammal resulting from decreased levels or activity of IL-17 receptor like polypeptide comprising administering to a patient the polypeptide of Claim 18, 19, or 20 or the polypeptide encoded by the nucleic acid of Claim 1, 2, or 3.

65. A method for treating, preventing or ameliorating a medical condition in a mammal resulting from decreased levels or activity of IL-17 receptor like polypeptide comprising administering to a patient an amount of a nucleic acid of claim 1, 2 or 3 or a nucleic acid that promotes transcription or translation of a nucleic acid claim 1, 2 or 3.

66. A method for treating, preventing or ameliorating a medical condition in a mammal resulting from increased levels or activity of IL-17 receptor like polypeptide comprising administering a selective binding agent of claim 34 to a patient.

67. A method for treating, preventing or ameliorating a medical condition in a mammal resulting from increased levels or activity of IL-17 receptor like polypeptide comprising

administering an antisense oligonucleotide that inhibits transcription or translation of a nucleic acid of claim 1, 2 or 3.

68. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject caused by or resulting from abnormal level of IL-17 receptor like polypeptide comprising:

(a) determining the presence or amount of expression of the polypeptide of Claim 18, 19, or 20 or the polypeptide encoded by the nucleic acid molecule of Claim 1, 2, or 3 in a sample; and

(b) comparing the level of IL-17 receptor like polypeptide in a biological, tissue or cellular sample from normal subjects or the subject at an earlier time, wherein susceptibility to a pathological condition is diagnosed based on the presence or amount of expression of the polypeptide.

69. A device, comprising:

(a) a membrane suitable for implantation; and

(b) cells encapsulated within said membrane, wherein said cells secrete a protein of Claim 18, 19, or 20, and wherein said membrane is permeable to said protein and impermeable to materials detrimental to said cells.

70. A device, comprising:

(a) a membrane suitable for implantation; and

(b) the IL-17 receptor like polypeptide encapsulated within said membrane, and wherein said membrane is permeable to said polypeptide and impermeable to materials detrimental to said polypeptide.

71. A method of identifying a compound which binds to a polypeptide comprising:

(a) contacting the polypeptide of Claim 18, 19, 20 or 21 with a compound; and

(b) determining the extent of binding of the polypeptide to the compound.

72. A method of modulating levels of a polypeptide in an animal comprising administering to the animal the nucleic acid molecule of Claim 1, 2, or 3.

73. A transgenic non-human mammal comprising the nucleic acid molecule of Claim 1, 2, or 3.

74. A diagnostic reagent comprising a detectably labeled polynucleotide encoding the amino acid sequence set out in at least one of SEQ ID NO: 2, SEQ ID NO: 5 or SEQ ID NO: 7, or a fragment, variant or homolog thereof including allelic variants and spliced variants thereof.

75. The diagnostic reagent of claim 74, wherein said labeled polynucleotide is a first-strand cDNA.

76. A method for detecting the presence of IL-17 receptor like nucleic acids in a biological sample comprising the steps of:

(a) providing a biological sample suspected of

containing IL-17 receptor like nucleic acids;

(b) contacting the biological sample with a diagnostic reagent according to claim 75 under conditions wherein the diagnostic reagent will hybridize with nucleic acids contained in said biological sample;

(c) detecting hybridization between IL-17 receptor like nucleic acid in the biological sample and the diagnostic reagent; and

(d) comparing the level of hybridization between the biological sample and diagnostic reagent with the level of hybridization between a known concentration of IL-17 receptor like nucleic acid and the diagnostic reagent.

77. A method for detecting the presence of IL-17 receptor like nucleic acids in a tissue or cellular sample comprising the steps of:

(a) providing a tissue or cellular sample suspected of containing IL-17 receptor liken nucleic acids;

(b) contacting the tissue or cellular sample with a diagnostic reagent according to claim 75 under conditions wherein the diagnostic reagent will hybridize with IL-17 receptor like nucleic acids;

(c) detecting hybridization between IL-17 receptor like nucleic acid in the tissue or cellular sample and the diagnostic reagent; and

(d) comparing the level of hybridization between the tissue or cellular sample and diagnostic reagent with the level of hybridization between a known concentration of IL-17

receptor like nucleic acid and the diagnostic reagent.

78. The method of claim 76 or 77 wherein said polynucleotide molecule is DNA.

79. The method of claim 76 or 77 wherein said polynucleotide molecule is RNA.

80. A method of identifying a candidate inhibitor of an interaction of an IL-17 receptor like polypeptide with an IL-17E ligand comprising detecting binding of said IL-17 receptor like polypeptide to said IL-17E ligand in the presence and absence of a test compound, and identifying said test compound as a candidate inhibitor when said binding is decreased in the presence of said test compound.

81. The method of claim 80 wherein said IL-17E ligand comprises the mature protein amino acid sequence of SEQ ID NO: 23.

82. The method of claim 80 wherein said IL-17 receptor like polypeptide comprises the mature protein amino acid sequence of SEQ ID NO: 2, 5 or 7.

83. A method of treating, preventing or ameliorating a pathological condition mediated by an IL-17E ligand comprising administering therapeutically effective amount of a molecule that specifically binds to IL-17E ligand or to an IL-17

receptor like polypeptide.

84. A method of inhibiting undesirable interaction of IL-17 receptor like polypeptide with IL-17E ligand comprising administering a therapeutically effective amount of a molecule capable of binding the IL-17 receptor like polypeptide or IL-17E ligand.

85. The method of claim 83 or 84 wherein said molecule is a candidate inhibitor identified by the method of claim 80.

86. The method of claim 83 or 84 wherein said molecule is a selective binding agent of claim 34.

87. The method of claim 83 or 84 wherein said molecule is a polypeptide of claim 18, 19, 20 or 21 that binds IL-17E ligand.

88. The method of claim 83 wherein said pathological condition is related to immune system dysfunction, inflammation or infection.

89. A method of antagonizing the activity of an IL-17 receptor like polypeptide comprising administering an effective amount of a polypeptide of claim 18, 19, 20, 21, 62 or 63 or an IL-17 receptor like polypeptide selective binding agent, small molecule, antisense oligonucleotide, peptide or derivatives thereof having specificity for IL-17 receptor like polypeptide.